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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Michael Thomas Greene

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EXAMINER

MURRAY, DANIEL C

ART UNIT

PAPER NUMBER

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01/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/672,186	Applicant(s) GREENE, MICHAEL THOMAS	
	Examiner DANIEL C. MURRAY	Art Unit 2443	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19SEP2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2443

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2443

4. **Claims 1-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Andreev et al. (US Patent Publication # US 2001/0018759 A1)** in view of **Rostoker et al. (US Patent # 5,742,510)**.

a) Consider **claim 1**, Andreev et al. clearly show and disclose, a method of determining the routing (figure2, abstract, paragraph [0002], paragraph [0088], paragraph [0091], paragraph [0096]) of interconnected regions (figure 11a, figure 11b, figure 11c, figure 11d, abstract, paragraph [0148]) of a routing problem by considering all required connections in parallel independently (figure2, figure 3, abstract, paragraph [0033], paragraph [0034], paragraph [0088], paragraph [0091], paragraph [0096]) and only attempting to resolve crossing conflicts only (figure 2, abstract, paragraph [0088], paragraph [0092], paragraph [0145], paragraph [0146], paragraph [0187], paragraph [0188], paragraph [0190], paragraph [0211], paragraph [0215], paragraph [0277]) when at least some contextual information about a region and the paths that cross in the region has been assembled (figure2, figure3, figure 8h, figure 9, abstract, paragraph [0089], paragraph [0102], paragraph [0124], paragraph [0143], paragraph [0187], paragraph [0210], paragraph [214]).

Rostoker et al. show and disclose microelectronic circuit fabrication, and more specifically to an integrated circuit physical design automation system utilizing optimization process decomposition and parallel processing, wherein considering all required connections in parallel independently (figure 6, abstract, column 21 lines 27-38).

Therefore, it would have been obvious to one of ordinary skill in the art that the time the invention was made to incorporate considering all required connections in parallel independently, as taught by, Rostoker et al. into the system of Andreev et al. for the purpose of optimized placement (Rostoker; abstract).

Art Unit: 2443

b) Consider **claim 2**, and **as applied to claim 1 above**, Andreev et al. as modified by Rostoker et al. clearly show and disclose, the method according to claim 1, wherein resolving of crossing conflicts is attempted only (figure 2, abstract, paragraph [0088], paragraph [0092], paragraph [0145], paragraph [0146], paragraph [0187], paragraph [0188], paragraph [0190], paragraph [0211], paragraph [0215], paragraph [0277]) when all possible relevant contextual information has been assembled (figure2, figure3, figure 8h, figure 9, abstract, paragraph [0089], paragraph [0102], paragraph [0124], paragraph [0143], paragraph [0187], paragraph [0210], paragraph [214]).

c) Consider **claim 3**, and **as applied to claim 1 above**, Andreev et al. as modified by Rostoker et al. clearly show and disclose, the method according to claim 1, comprising the steps of:

(a) defining, for each set of regions to be connected (figure 11a, figure 11b, figure 11c, figure 11d, abstract, paragraph [0148]), routing which represents a suitable manner of connecting them (figure2, abstract, paragraph [0002], paragraph [0088], paragraph [0091], paragraph [0096], paragraph [0190]), respecting only those crossing conflicts (paragraph [0145], paragraph [0146], paragraph [0187], paragraph [0188], paragraph [0211], paragraph [0215], paragraph [0277]) which have been explicitly registered with the set currently being considered (figure2, abstract, paragraph [0088], paragraph [0089] paragraph [0190]);

(b) examining connections across shared boundaries (paragraph [0148]);

(c) collating all such proposed routing and resolving any crossing conflicts (paragraph [0145], paragraph [0146], paragraph [0187], paragraph [0188], paragraph [0211], paragraph [0215], paragraph [0277]) in a symmetric manner (figure 2, abstract, paragraph [0033], paragraph [0089], paragraph [0091], paragraph [0096]);

Art Unit: 2443

(d) registering such crossing conflicts (paragraph [0145], paragraph [0146], paragraph [0187], paragraph [0188], paragraph [0211], paragraph [0215], paragraph [0277]) with the sets of regions which will be required to respect them on the next pass (figure 2, abstract, paragraph [0033], paragraph [0088]);

(e) repeating steps (a) to (c) until a sufficient completion and quality of routing solution is attained (paragraph [0092]); and

(f) converting the routing into suitable geometric representations of routing paths in a way which takes all desired routing into account symmetrically and simultaneously (figure 2, figure 3, figure 9, figure 10, figure 11a, abstract, paragraph [0033], paragraph [0038], paragraph [0088], paragraph [0093], paragraph [0095], paragraph [0096]).

d) Consider **claim 4**, and **as applied to claim 3 above**, Andreev et al. as modified by Rostoker et al. clearly show and disclose, the method according to claim 3, in which the regions are polygons (figure 11a, figure 11b, figure 11c) and the shared boundaries are edges (figure 11a, figure 11b, figure 11c, figure 11d, paragraph [0148]).

e) Consider **claim 5**, and **as applied to claim 1 above**, Andreev et al. as modified by Rostoker et al. clearly show and disclose, the method according to claim 1, wherein the interconnected regions (figure 11a, figure 11b, figure 11c, figure 11d, abstract, paragraph [0148]) are regions of an electrical circuit (figure 1, paragraph [0015], paragraph [0033], paragraph [0034]).

f) Consider **claim 6**, Andreev et al. as modified by Rostoker et al. clearly show and disclose, a computer-implemented method (paragraph [0034], paragraph [0329]) of determining the routing (figure 2, abstract, paragraph [0002], paragraph [0088], paragraph [0091], paragraph [0096]) of interconnected regions of a routing problem (figure 11a, figure 11b, figure 11c, figure 11d, abstract, paragraph [0148]), the interconnected regions (figure 11a, figure 11b, figure 11c, figure 11d, abstract,

Art Unit: 2443

paragraph [0148]) being regions of an electrical circuit (figure 1, paragraph [0015], paragraph [0033], paragraph [0034]), by considering all required connections in parallel independently (figure2, figure 3, abstract, paragraph [0033], paragraph [0034], paragraph [0088], paragraph [0091], paragraph [0096]) and attempting to resolve conflicts only (figure 2, abstract, paragraph [0088], paragraph [0092], paragraph [0145], paragraph [0190]) when at least some contextual information about a region and the paths which cross there has been assembled (figure2, figure3, abstract, paragraph [0089], paragraph [0102], paragraph [0124]).

Response to Arguments

5. Applicant's arguments with respect to **claims 1-6** have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- | | |
|----------------------|----------------------|
| ➤ US 6,223,329 B1 | ➤ US 2008/0072201 A1 |
| ➤ 5,930,500 | ➤ US 2008/0134122 A1 |
| ➤ US 2008/0263497 A1 | ➤ US 7,376,921 B2 |
| ➤ US 2008/0184187 A1 | ➤ US 6,289,495 B1 |

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL C. MURRAY whose telephone number is 571-270-1773. The examiner can normally be reached on Monday - Friday 0800-1700 EST.

Art Unit: 2443

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia Dollinger can be reached on (571)-272-4170. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DCM/

Examiner, Art Unit 2443

/Nathan J. Flynn/

Supervisory Patent Examiner, Art Unit 2454